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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,168	07/12/2004	Adrianus Sempel	NL020883	5395

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS

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BRIARCLIFF MANOR, NY 10510

EXAMINER

LUI, DONNA V

ART UNIT

PAPER NUMBER

2629

DATE MAILED: 03/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/501,168		SEMPEL ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Donna V. Lui		2675	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 2 June 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 July 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>7/12/04</u>   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities: The specification must contain the appropriate headings such as the following:

- a. Cross-References to Related Applications
- b. Background of the Invention
  - i. Field of Invention
  - ii. Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98
- c. Brief Summary of the Invention
- d. Brief Description of the Drawings
- e. Detailed Description of the Invention

Appropriate correction is required.

### ***Drawings***

2. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Inventorship***

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. The term "substantially" in claim 7 is a relative term which renders the claim indefinite. The term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Substantially was interpreted as having one common material between the semiconductor polymer material and the diode. In this case the common material is a polymer.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 1 and 8** are rejected under 35 U.S.C. 102(b) as being anticipated by Asai et al.

(Patent Number 5,886,474).

With respect to **Claim 1**, Asai discloses a passive addressed matrix display (*column 5, lines 62-64*). Asai teaches the matrix display having a plurality of luminescent picture elements arranged in the matrix (*column 6, lines 13-16*), a plurality of address buses arranged in rows of the matrix and supplied with a select signal having a low signal level and a high non-select signal level (*See figure 5, element 5*), and a plurality of data buses orthogonal to the address buses (*See figure 5, element 1*), each of the luminescent picture elements comprising a luminescent layer between a first and a second display electrode (*column 6, lines 35-46, the first and second display electrodes are equivalent to elements 5 and 6*), characterized in that each luminescent picture element is combined with a de-coupling means connected between a respective one of the first and second display electrodes and a respective one of the address buses and the data buses (*column 10, lines 37-54; the de-coupling means comprise an NPN bipolar transistor  $Tr$  and a FET where each is connected respectively to an address bus and a data bus, each element is combined with a de-coupling means through electrical coupling along the electrodes (elements 1 and 5)*), and in series with the picture element (*See figure 5, where  $Tr$  is in series with the picture element  $PX$* ), for preventing the picture element from charging/discharging when it is in the non-select state and another picture element is in the select state (*column 3, lines 33-38*).

With respect to **Claim 8**, Asai teaches the de-coupling means comprises an electromechanical switch (*See figure 5 where the electromechanical switch is the NPN bipolar transistor and the FET*).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 2 and 4-6** rejected under 35 U.S.C. 103(a) as being unpatentable over Asai in view of Huang et al. (Patent Number: 5,751,263).

With respect to **Claim 2**, Asai does not teach the de-coupling means to comprise a diode. Huang teaches a de-coupling means to comprise a diode (*column 6, lines 57-63*). Huang teaches the de-coupling means is connected between the address and data buses (*See figure 7, elements 15 and 12 respectively*), and are in series with the picture element (the connection begins at a node on the A1 line or NOT (A1) line to a transistor to the LED (59) which is then connected to the address lines 15).

It would have been obvious for a person of ordinary skill in the art at the time the invention was made to modify the de-coupling means of Asai such that two diodes are connected to the gate of the transistor (Tr or FET), as taught by Huang, for the purpose of preventing forward biasing (*column 6, lines 60-63*).

With respect to **Claim 4**, Asai teaches the diode and the picture element to form a lateral arrangement (*See figure 5, where lateral arrangement was interpreted as direct connections between the transistor and the picture element and containing no intermediate elements; please*

*further note that although Asai teaches a transistor and not a diode, it is irrelevant to the arrangement since direct connections are made to the picture element regardless of the de-coupling means being a diode or transistor).*

With respect to **Claim 5**, Asai teaches the diode and the picture element with which it is combined form a vertical arrangement (*See figure 9, where vertical arrangement was interpreted as elements stacked to form a display; please further note that although Asai teaches a transistor and not a diode, it is irrelevant to the arrangement since the stacking of elements is made regardless of the de-coupling means being a diode or transistor).*

8. **Claim 3** is rejected under 35 U.S.C. 103(a) as being unpatentable over Asai in view of Huang and further in view of Hilsum et al (Patent Number: 3, 904, 924).

With respect **Claim 3**, Neither Asai nor Huang teach the de-coupling means to comprise a Schottky diode. Hilsum teaches the use of a Schottky diode (*column 2, lines 27-29*).

It would have been obvious for a person of ordinary skill in the art at the time the invention was made to use Schottky diodes in an electroluminescent display, as taught by Hilsum to the de-coupling means of Asai as modified by Huang for the purpose of isolating the electroluminescent elements from one and another when the switching voltage is applied across the selected electroluminescent elements (*column 2, lines 55-59*), and also as well known in the art for the purpose of fast switching and a having a low forward voltage drop as characteristic of the Schottky diode.



9. **Claims 6 and 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Asai in view of Huang in view of Hilsum and further in view of Wendy Barnaby (Seminar and Discussion on New Plastics held at the Institute of Physics on Tuesday 9 May 2000, herein after referred to as, "Barnaby").

With respect to **Claim 6**, Asai teaches a layer stack comprising a metal layer (See figure 9, element 1). Asai, Huang, nor Hilsum teach the Schottky diode to comprise a layer stack of a semiconducting polymer material. Barnaby teaches the use of semiconductor material which are carbon-based polymers and that are grown from solvents and processed from solution (paragraph 5, lines 4-6).

It would have been obvious for a person of ordinary skill in the art at the time the invention was made to use the semiconducting polymer material of Barnaby to the matrix display of Asai as modified by Huang and Hilsum, for the purpose of processing semiconductor material that is easier to fabricate than silicon (paragraph 6, lines 6-7) and for reducing the cost of producing displays (paragraph 6, lines 1-3).

With respect to **Claim 7**, Neither Asai, Huang, nor Hilsum teach the picture elements to comprise a luminescent layer of a semiconducting polymer material, where the semiconducting polymer material has substantially the same composition as the semiconducting polymer material of the Schottky diode. Barnaby teaches the semiconducting polymer material (paragraph 5, lines 1-11) has substantially (note the above 35 U.S.C 112 rejection) the same composition as the

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semiconducting polymer material of a LED (paragraph 7, lines 1-2), the common material being the polymer.

It would have been obvious for a person of ordinary skill in the art at the time the invention was made to use semiconducting polymer material having a common material in the composition of a diode, as taught by Barnaby to the matrix display of Asai as modified by Huang, and Hilsum, for the purpose of reducing the cost of producing displays (paragraph 6, lines 1-3).

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

LeChevalier et al. (Pub. No.: US 2003/0151570 A1) is cited to teach accurate generation of light output from an LED display.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donna V. Lui whose telephone number is (571) 272-4920. The examiner can normally be reached on Monday through Friday 8:30 a.m. - 5:00 p.m..

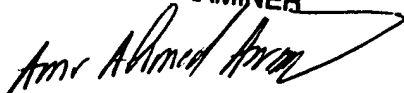
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571)272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Donna V Lui  
Examiner  
Art Unit 2675  
Division 2629

AMR A. AWAD  
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to read "Amir Ahmed Awad", written over a horizontal line.